ioLogik E2200 Series

Smart Ethernet remote I/O with Click&GO Logic

> **Front-end intelligence with patented Click&Go control logic, up to 24 rules**
> **Active communication with MX-AOPC UA Server**
> **Save time and wiring cost with peer-to-peer communication**
> **Supports SNMPv1/v2c/v3**
> **Friendly configuration via web browser**
> **Simplify I/O management with MXIO library for Windows or Linux platforms**
> **Wide operating temperature range of -40 to 75°C (-40 to 167°F)**

: Introduction

Moxa's ioLogik E2200 Ethernet Remote I/O features the Click&Go programming interface. The ioLogik E2200 is a PC-based data acquisition and control device that uses proactive, event-based reporting to control I/O devices. Unlike traditional PLCs, which are passive and must poll for data, Moxa's ioLogik E2200 series will, when paired with our MX-AOPC UA Server, communicate with SCADA systems using active messaging that is pushed to the server only when state changes or configured events occur. Additionally, the ioLogik E2200 features SNMP for communications and control using an NMS (Network Management System), allowing IT professionals to configure the device to push I/O status reports according to configured specifications. This report-by-exception approach, which is new to PC-based monitoring, requires far less bandwidth than traditional polling methods.

### PC-Free Alarm and Control Intelligence

The ioLogik E2200 supports simple and powerful Click&Go™ technology to configure event-driven reports and alarms delivered over email, TCP/UDP, or SNMP traps, giving you a powerful effective, tool for delivering time-stamped status updates in real time.

With built-in Click&Go™ intelligence, the ioLogik E2200 can be configured for simple outputs paired up with simple input triggers without the need for a PC controller. This allows the ioLogik E2200 to be configured to automatically report I/O events according to user-specified conditions.

SNMP Protocol for Ethernet Device Management

In addition to Modbus/TCP, the ioLogik E2200 supports both SNMP and CGI scripting, giving IT engineers familiar tools for controlling and monitoring I/O systems. By using SNMP, IT engineers can configure the ioLogik E2200 to deliver alarms (traps) for specific I/O events, or use it to read or write directly to the I/O registers. For the strongest security, the ioLogik E2200 features SNMP v3, with authentication and encryption. With Moxa's SNMP-capable ioLogik E2200, even IT professionals can easily integrate industrial sensors and servos over an Ethernet backbone, and with its strong network management tools the ioLogik E2200 is ideal for a wide variety of industrial applications, whether in environmental monitoring, telecommunications, power production and delivery, or transportation.
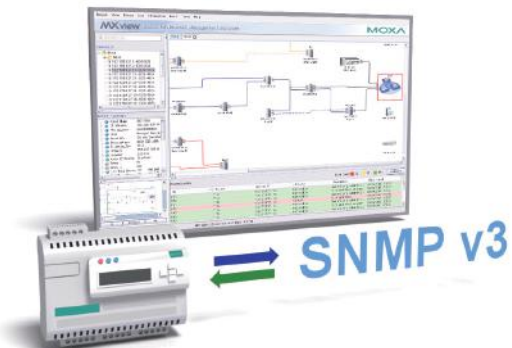
Push Technology for Events and Alarms

The ioLogik E2200 series is designed for use with the Moxa's MX-AOPC UA server. When used with MX-AOPC UA Server, the E2200 is upgraded to use active push communications when communicating state changes and/or events to the SCADA system. Unlike a polling system, when using a push architecture for communications with the SCADA messages will only be delivered when state changes or configured events occur. Active messaging thus allows for big increases in data acquisition and control throughput while also delivering big reductions in network overhead.

: ioLogik E2210 Specifications

Inputs and Outputs
Digital Inputs: 12 channels
Digital Outputs: 8 channels
Isolation: 3k VDC or 2k Vrms

Digital Input
Sensor Type: Wet Contact (NPN), Dry Contact
I/O Mode: DI or Event Counter
Dry Contact:
• On: short to GND
• Off: open
Wet Contact (DI to GND):
• On: 0 to 3 VDC
• Off: 10 to 30 VDC
Common Type: 12 points per COM
Counter Frequency: 900 Hz
Digital Filtering Time Interval: Software Configurable

Digital Output
Type: Sink
I/O Mode: DO or Pulse Output
Pulse Output Frequency: 1 kHz
Over-Voltage Protection: 45 VDC
Over-Current Protection: 2.6 A (4 channels @ 650 mA)
Over-Temperature Shutdown: 175°C (min.)
Current Rating: 200 mA per channel

Power Requirements
Input Voltage: 12 to 36 VDC
Input Current: 190 mA @ 24 VDC

MTBF (mean time between failures)
Time: 213,673 hrs
Standard: Telcordia SR332

: ioLogik E2212 Specifications

Inputs and Outputs
Digital Inputs: 8 channels
Digital Outputs: 8 channels
Configurable DIOs: 4 channels
Isolation: 3k VDC or 2k Vrms

Digital Input
Sensor Type: Wet Contact (NPN or PNP) and Dry Contact
I/O Mode: DI or Event Counter
Dry Contact:
• On: short to GND
• Off: open
Wet Contact (DI to GND):
• On: 0 to 3 VDC
• OFF: 10 to 30 VDC
Common Type: 6 points per COM
Counter Frequency: 900 Hz
Digital Filtering Time Interval: Software Configurable

Digital Output
Type: Sink
I/O Mode: DO or Pulse Output
Pulse Output Frequency: 1 kHz
Over-Voltage Protection: 45 VDC
Over-Current Protection: 2.6 A (4 channels @ 650 mA)
Over-Temperature Shutdown: 175°C (min.)
DIO Output Leakage Current: 4.0 mA @ 24 VDC
Current Rating: 200 mA per channel

Power Requirements
Input Voltage: 12 to 36 VDC
Input Current: 136 mA @ 24 VDC

MTBF (mean time between failures)
Time: 217,722 hrs
Standard: Telcordia SR332

ioLogik E2214 Specifications

Inputs and Outputs
Digital Inputs: 6 channels
Relay Outputs: 6 channels
Isolation: 3k VDC or 2k Vrms

Digital Input
Sensor Type: Wet Contact (NPN or PNP) and Dry Contact
I/O Mode: DI or Event Counter
Dry Contact:
• On: short to GND
• Off: open
Wet Contact (DI to GND):
• On: 0 to 3 VDC
• Off: 10 to 30 VDC
Common Type: 3 points per COM
Counter Frequency: 900 Hz
Digital Filtering Time Interval: Software Configurable

Relay Output
Type: Form A (N.O.) power relay

Contact Current Rating:
• Inductive Load: 2 A @ 30 VDC, 250 VAC, 110 VAC
• Resistive Load: 5 A @ 30 VDC, 250 VAC, 110 VAC
Minimum permitted load: 1 A @ 5 VDC
Initial Insulation Resistance: 1000 mega-ohms (min.) @ 500 VDC
Mechanical Endurance: 1,000,000 operations
Electrical Endurance: 100,000 operations @ 5 A resistive load
Contact Resistance: 100 milli-ohms (max.)
Pulse Output: 0.3 Hz at rated load
Note: Ambient humidity must be non-condensing and remain between 5 and 95%. The relays of the ioLogik E2214 may malfunction when operating in high condensation environments below 0° Celsius.

Power Requirements
Input Voltage: 12 to 36 VDC
Input Current: 170 mA @ 24 VDC

MTBF (mean time between failures)
Time: 307,239 hrs
Standard: Telcordia SR332

ioLogik E2240 Specifications

Inputs and Outputs
Analog Inputs: 8 channels
Analog Outputs: 2 channels

Analog Input
Isolation: 3k VDC or 2k Vrms
Type: Differential input
Resolution: 16 bits
I/O Mode: Voltage/Current (software selectable)
Input Range: ±150 mV, ±500 mV, ±5 V, ±10 V, 0 to 20 mA, 4 to 20 mA
Accuracy:
±0.1% FSR @ 25°C
±0.3% FSR @ -10 and 60°C
±0.5% FSR @ -40 and 75°C
Sampling Rate:
All channels:
• 10 samples/sec for voltage
• 6 samples/sec for current
Per channel:
• 1.25 samples/sec for voltage
• 0.75 samples/sec for current

Single channel:
• 1.25 samples/sec for voltage
• 0.75 samples/sec for current
Input Impedance: 900 kilo-ohms ohms (min.)
Built-in Resistor for Current Input: 120 ohms

Analog Output
Resolution: 12 bits
Output Range: 0 to 10 V, 4 to 20 mA
Drive Voltage: 15 VDC for current output
Accuracy:
±0.1% FSR @ 25°C
±0.3% FSR @ -10 and 60°C
±0.5% FSR @ -40 and 75°C
Load Resistor: Less than 250 ohms

Power Requirements
Input Voltage: 12 to 36 VDC
Input Current: 190 mA @ 24 VDC

MTBF (mean time between failures)
Time: 155,941 hrs
Standard: Telcordia SR332

ioLogik E2242 Specifications

Inputs and Outputs
Configurable DIOs (by software): 12 channels
Analog Inputs: 4 channels
Isolation: 3k VDC or 2k Vrms

Digital Input
Sensor Type: Wet Contact (NPN or PNP) and Dry Contact
I/O Mode: DI or Event Counter
Dry Contact:
• On: short to GND
• Off: Open
Wet Contact (DI to GND):
• On: 0 to 3 VDC
• Off: 10 to 30 VDC
Common Type: 6 points per COM
Isolation: 3k VDC or 2k Vrms
Counter Frequency: 900 Hz
Digital Filtering Time Interval: Software selectable

Digital Output
Type: Sink
I/O Mode: DO or Pulse Output
Pulse Output Frequency: 1 kHz
Over-Voltage Protection: 45 VDC
Over-Current Protection: 2.6 A (4 channels @ 650 mA)
Over-Temperature Shutdown: 175°C (min.)
DIO Output Leakage Current: 4.0 mA @ 24 VDC
Current Rating: 200 mA per channel

Analog Input
Type: Differential input
Resolution: 16 bits
I/O Mode: Voltage / Current (software selectable)
Input Range: ±150 mV, 0 to 150 mV, ±500 mV, 0 to 500 mV, ±5 V, 0 to 5 V, ±10 V, 0 to 10 V, 0 to 20 mA, 4 to 20 mA

Accuracy:
±0.1% FSR @ 25°C
±0.3% FSR @ -10 and 60°C
±0.5% FSR @ -40 and 75°C
Sampling Rate:
All channels: 32 samples/sec
Per channel: 8 samples/sec
Single channel: 100 samples/sec
Input Impedance: 200 kilo-ohms ohms (min.)
Built-in Resistor for Current Input: 120 ohms

Power Requirements
Input Voltage: 12 to 36 VDC
Input Current: 178 mA @ 24 VDC
MTBF (mean time between failures)
Time: 204,391 hrs
Standard: Telcordia SR332

: ioLogik E2260 Specifications

Inputs and Outputs
Digital Outputs: 4 channels
RTDs: 6 channels
Isolation: 3k VDC or 2k Vrms
Digital Output
Type: Sink
I/O Mode: DO or Pulse Output
Pulse Output Frequency: 100 Hz
Over-Voltage Protection: 45 VDC
Over-Current Protection: 2.6 A (4 channels @ 650 mA)
Over-Temperature Shutdown: 175°C
Current Rating: 200 mA per channel
RTD
Sensor Type: PT50, PT100, PT200, PT500, PT1000; JPT100, JPT200, JPT500, JPT1000; NI100, NI120, NI200, NI500, NI1000; Resistance of 310, 620, 1250, and 2200 ohms
Input Connection: 2- or 3-wire

Sampling Rate:
All channels: 12 samples/sec
Per channel: 2 samples/sec
Resolution: 0.1°C or 0.1 ohm
Accuracy:
±0.1% FSR @ 25°C
±0.3% FSR @ -10 and 60°C
±0.5% FSR @ -40 and 75°C
Input Impedance: 625 kilo-ohms ohms
Power Requirements
Input Voltage: 12 to 36 VDC
Input Current: 95 mA @ 24 VDC
MTBF (mean time between failures)
Time: 327,282 hrs
Standard: Telcordia SR332

: ioLogik E2262 Specifications

Inputs and Outputs
Digital Outputs: 4 channels
Thermocouples: 8 channels
Digital Output
Isolation: 3k VDC or 2k Vrms
Type: Sink
I/O Mode: DO or Pulse Output
Pulse Output Frequency: 100 Hz
Over-Voltage Protection: 45 VDC
Over-Current Protection: 2.6 A (4 channels @ 650 mA)
Over-Temperature Shutdown: 175°C
Current Rating: 200 mA per channel
Thermocouple
Sensor Type: J (0 to 750°C), K (-200 to 1250°C), T (-200 to 350°C), E (-200 to 900°C), R (-50 to 1600°C), S (-50 to 1760°C), B (600 to 1700°C), N (-200 to 1300°C)

Millivolt Type:
• Mode: ±78.126 mV, ±39.062 mV, ±19.532 mV
• Fault and over-voltage protection: -35 to +35 VDC (power off); -25 to +30 VDC (power on)
Sampling Rate:
All channels: 12 samples/sec
Per channel: 1.5 samples/sec
Resolution: 16 bits
Accuracy:
±0.1% FSR @ 25°C
±0.3% FSR @ -10 and 60°C
±0.5% FSR @ -40 and 75°C
Input Impedance: 1 mega-ohm ohms
Power Requirements
Input Voltage: 12 to 36 VDC
Input Current: 160 mA @ 24 VDC
MTBF (mean time between failures)
Time: 341,063 hrs
Standard: Telcordia SR332

: Common Specifications

LAN
Ethernet: 1 10/100 Mbps RJ45 port
Protection: 1.5 kV magnetic isolation
Protocols: Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, SNMP, HTTP, CGI, SNTP, SMTP
Serial
Interface: 1 RS-485-2w terminal block port
Parity: None
Data Bits: 8
Stop Bits: 1

Flow Control: None
Baudrate: 1200 to 115200 bps
Protocols: Modbus RTU (gateway)
Physical Characteristics
Wiring: I/O cable max. 14 AWG
Dimensions: 115 x 79 x 45.6 mm (4.53 x 3.11 x 1.80 in)
Weight: under 250 g (0.55 lb)
Mounting: DIN-rail or wall

MOXA®

Environmental Limits

Operating Temperature:
Standard Models: -10 to 60°C (14 to 140°F)
Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)
Shock: IEC 60068-2-27
Vibration: IEC 60068-2-6
Altitude: Up to 2000 m
Note: Please contact Moxa if you require products guaranteed to function properly at higher altitudes.

Standards and Certifications

Safety: UL 508
EMC: EN 61000-6-2/6-4
EMI: CISPR 22, FCC Part 15B Class A

EMS:
IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV
IEC 61000-4-3 RS:
  80 MHz to 1 GHz: 10 V/m
  1.4 GHz to 2 GHz: 3 V/m
  2 GHz to 2.7 GHz: 1 V/m
IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV
IEC 61000-4-5 Surge: Power: 1 kV
IEC 61000-4-6 CS: 10 V
IEC 61000-4-8
Green Product: RoHS, CRoHS, WEEE
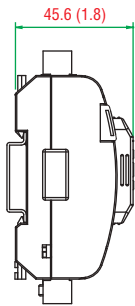Note: Please check Moxa's website for the most up-to-date certification status.

Warranty

Warranty Period: 5 years (excluding ioLogik E2214*)
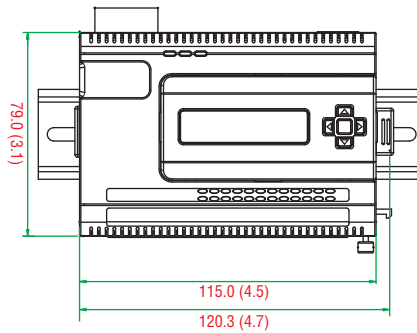**Details:** See www.moxa.com/warranty
*Because of the limited lifetime of power relays, products that use that component are covered by a 2-year warranty.
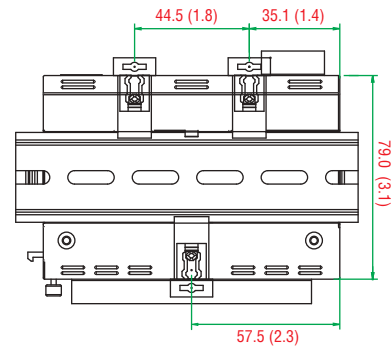
Dimensions

Unit: mm (inch)

Side View   Front View   Rear View

Ordering Information

Available Models

ioLogik E2210: Smart Ethernet Remote I/O with 12 DIs, 8 DOs, -10 to 60°C operating temperature
ioLogik E2210-T: Smart Ethernet Remote I/O with 12 DIs, 8 DOs, -40 to 75°C operating temperature
ioLogik E2212: Smart Ethernet Remote I/O with 8 DIs, 8 DOs, 4 DIOs, -10 to 60°C operating temperature
ioLogik E2212-T: Smart Ethernet Remote I/O with 8 DIs, 8 DOs, 4 DIOs, -40 to 75°C operating temperature
ioLogik E2214: Smart Ethernet Remote I/O with 6 DIs, 6 relays, -10 to 60°C operating temperature
ioLogik E2214-T: Smart Ethernet Remote I/O with 6 DIs, 6 relays, -40 to 75°C operating temperature
ioLogik E2240: Smart Ethernet Remote I/O with 8 AIs, 2 AOs, -10 to 60°C operating temperature
ioLogik E2240-T: Smart Ethernet Remote I/O with 8 AIs, 2 AOs, -40 to 75°C operating temperature
ioLogik E2242: Smart Ethernet Remote I/O with 12 DIOs, 4 AIs, -10 to 60°C operating temperature
ioLogik E2242-T: Smart Ethernet Remote I/O with 12 DIOs, 4 AIs, -40 to 75°C operating temperature
ioLogik E2260: Smart Ethernet Remote I/O with 4 DOs, 6 RTDs, -10 to 60°C operating temperature
ioLogik E2260-T: Smart Ethernet Remote I/O with 4 DOs, 6 RTDs, -40 to 75°C operating temperature
ioLogik E2262: Smart Ethernet Remote I/O with 4 DOs, 8 TCs, and -10 to 60°C operating temperature
ioLogik E2262-T: Smart Ethernet Remote I/O with 4 DOs, 8 TCs, and -40 to 75°C operating temperature

Optional Accessories (can be purchased separately)

LDP1602: LCD module with 16 x 2 text and 5 buttons, 0 to 55°C operating temperature

Package Checklist

- ioLogik E2200